

MAMMOMAT Novation DR

SP

Software

System

WH AWS, VA11C

© Siemens AG 2005

The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

Disclaimer

The installation and service of equipment described herein is to be performed by qualified personnel who are employed by Siemens or one of its affiliates or who are otherwise authorized by Siemens or one of its affiliates to provide such services.

Assemblers and other persons who are not employed by or otherwise directly affiliated with or authorized by Siemens or one of its affiliates are directed to contact one of the local offices of Siemens or one of its affiliates before attempting installation or service procedures.

1	AEC calibration tool	4
	Introduction	4
	When is AEC calibration required?	4
	Calibration-related procedures	4
	Starting the AEC Calibration Tool	4
	Exiting the tool and restarting the syngo application.	5
	Main window functions and options	6
	Dark offset	9
	Setting the AEC dark offset values	9
	Determining the Half Value Layer (HVL)	10
	Determining the Entrance Skin Exposure (ESE)	13
	Generating the goal tables	17
2	WH AWS software reinstallation	21
	Introduction	21
	Preparation	22
	Loading the software	23
	Final steps	29
3	Changes to the previous version	30

Introduction

This chapter describes how to calibrate the AEC by generating the dark offset, a goal table for a desired target/filter combination, and loading it into the DirectRay Power and X-Ray Control Module (PXCM/Brick).

Use the **AEC Calibration Tool** to perform the calibration.

When is AEC calibration required?

AEC calibration should be performed:

- Once a year.
- If changes are made to any of the DirectRay components or to the generator (for example, if the PXCM is replaced).

Calibration-related procedures

The purpose of AEC calibration is to determine a valid mAs value and to use that value to take a series of exposures to generate goal images. The AEC Calibration Tool averages the goal images and generates and loads a goal table into the PXCM.

There are various calibration procedures which are performed in sequence:

- **Dark offset**; described in ([Dark offset / p. 9](#)).
- **Determining the Half Value Layer (HVL)** of the X-ray generator for a given target/filter combination; described in ([Determining the Half Value Layer \(HVL\) / p. 10](#)).
- The HVL is used to **Determine the Entrance Skin Exposure (ESE)**; see the description in . The resulting mAs value is used during goal image exposure, in the next procedure ([Determining the Entrance Skin Exposure \(ESE\) / p. 13](#)).
- The mAs value, determined in the ESE procedure, is used to generate the **goal image** (see the description in ([Generating the goal tables / p. 17](#))). This results in a goal table which is loaded into the PXCM.

NOTE

If you know the correct HVL value, as determined in the preceding "Determine HVL" procedure, you can skip this procedure and go right to the "Determine ESE" procedure.

Starting the AEC Calibration Tool

1. Log onto the service software. Select **Options-> Service> Local service**.
 - Enter the service key (6 characters in the 2nd field) in the syngo software screen.
 - Confirm the screen with **OK**.
 - Select Acquisition System.
 - Select **AEC Calibration Tool**.
 - The syngo application software is automatically stopped.

- The **AEC Calibration Tool** main window the opens.

The main window is shown in the image below in (Fig. 1 / p. 5).

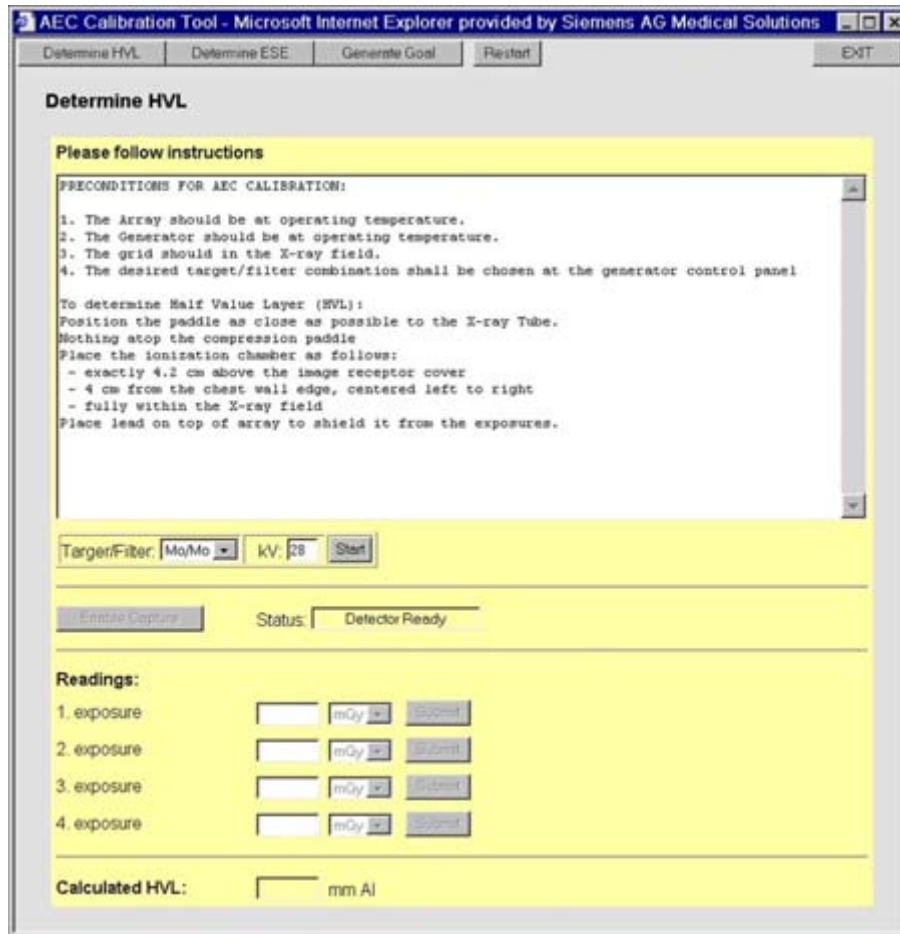


Fig. 1: Start the AecCalTool

The screenshot above (Fig. 1 / p. 5) shows the default configuration of the tool:

- The **target/filter** setting is **Mo/Mo**.
- **kV** is set to **28**.

Exiting the tool and restarting the syngo application

To restart the syngo application software:

1. Select **Exit** in the AEC Calibration Tool.
2. Go to **Utilities** in the service software and select **Source -> System**.
3. Select **Restart Application** and press **Go** to restart the syngo application.

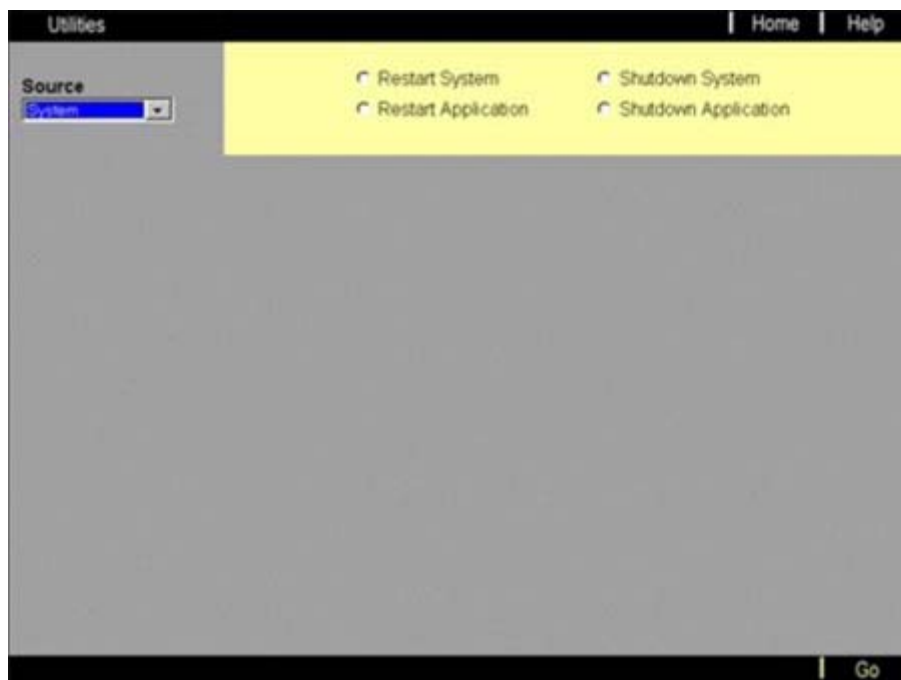


Fig. 2: Restart the syngo application

Main window functions and options

The **AEC Calibration Tool** window's functions and options are described in [\(Main window functions and options / p. 6\)](#).

Tab. 1 Main window functions and options

Function/option	Description
Procedure options	<p>Select the procedures you want to perform from the following three options. Only one option can be selected at a time. A procedure is not selected automatically when the tool starts. You must select one of the three procedures to continue.</p> <p>Determine HVL. Select this procedure to determine the Half Value Layer (HVL) of the X-ray generator for a given target/filter combination. For the procedure for determining the HVL, refer to (Determining the Half Value Layer (HVL) / p. 10).</p> <p>Determine ESE. Select this procedure to determine the Entrance Skin Exposure (ESE). This step may be performed without determining the HVL of the X-ray generator. However, a valid HVL value must be known. For the procedure for determining the ESE, refer to (Determining the Entrance Skin Exposure (ESE) / p. 13).</p> <p>Generate Goal. Select this procedure to generate the goal table for the selected target/filter combination. This step may be performed without determining the HVL of the X-ray generator or the ESE. However, a valid mAs value must be known. For the procedure for generating the goal tables, refer to (Generating the goal tables / p. 17).</p>
Target/filter	<p>The desired target/filter combination. The goal table is named to match (Mo/Mo is goaltab1, Mo/Rh is goaltab2, W/Rh is goaltab3). Make sure that the generator setting matches this selection. Since this selection determines future instructions and calculations, it is disabled once the first HVL exposure is taken.</p>
AGD	<p>Use this option to select the desired Average Glandular Dose to be used for calculating the mAs value for calibration. In a future version, this value will be logged at the end of the goal table file. The default is 1.5 mGy (150 mR).</p>
kV	<p>Use this option to indicate the kV to be used during calibration. This selection in the AEC Calibration Tool window does not actually change the generator settings, but is intended to remind the user of the current generator settings. The default is 28 kV.</p>
mAs	<p>Use this option to indicate the mAs to be used during calibration. This selection in the AEC Calibration Tool window does not actually change the generator settings, but is intended to remind the user of the current generator settings.</p>
Enable Capture button	<p>Use this option to enable the DRAPI for image capture.</p>
Units	<p>Use this option to select the radiation units to be used. You may select either R/mR or Gy/mGy. When this selection is changed, the AGD setting also changes to convert the value to the current units. The selected unit is also displayed in the instructions field after each exposure.</p>

Function/option	Description
Reading	Use this field to enter the dosimeter reading, as instructed after each exposure for HVL or ESE determination. Enter the numerical characters in the field and click the Submit button. The last entry is cleared when the Enable Capture button is pressed.
Submit button	Use this button to submit a radiation entry.
Status	<ul style="list-style-type: none">• Detector NOT Ready The DRAPI is processing the previous exposure.• Detector Ready The DRAPI is ready to be enabled for exposure.• Detector Armed The DRAPI is ready for exposure. Press the generator exposure button to start the exposure.• Detector Exposed The detector has been exposed to X-rays.

Dark offset

The **dark offset** has to be set to **0**.

Setting the AEC dark offset values

1. Log onto the service software. Select **Options-> Service> Local service**.
 - Enter the service key (6 characters in the 2nd field) in the syngo software screen.
 - Confirm the screen with **OK**.
 - Select Acquisition System.
 - Select Brick Configuration.

For security reasons, you may be prompted to enter a login name and password before executing this function.

User name: **root**

Password:*****
2. Select **Brick** and then **Brick AEC Configuration**.
3. Select **Modify Settings** and set **Modify Array Dark Offset** and **Modify Array Mag Offset** to **0** in the **Dark Offset Value** field.

Enter **0** for both.

 - **Short-term (Load)** and for
 - **Long-term (Save)**

by choosing the **Duration of Change** button.
4. After the changes have been made, scroll to the bottom of the page and click **Back to the Brick Control Panel....**
5. Check the setting with the **Status** button.

Determining the Half Value Layer (HVL)

Select the **Determine HVL** procedure option for determining the HVL of the X-ray generator for a given target/filter combination.

This procedure requires taking four exposures.

- The first and the last exposure are "control" exposures with no attenuating material in place.
- The second exposure is taken with aluminum in the path of the X-ray beam. For the **molybdenum** target, use aluminum with a thickness of 0.3 mm. For the **tungsten** target, use aluminum with a thickness of 0.4 mm.
- The third exposure is taken with a larger aluminum thickness in the path of the X-ray beam. For **Mo/Mo**, use aluminum with a thickness of 0.4 mm. For **Mo/Rh**, use a thickness of 0.5 mm and for **W/Rh**, use 0.6 mm.

The result of the HVL procedure is a fractional number representing the HVL in millimeters of aluminum.

NOTE

If you already know the HVL and want to proceed with determining the ESE value, go to [\(Determining the Half Value Layer \(HVL\) / p. 10\)](#).

Procedure

In the main AEC Calibration Tool window, select the **Determine HVL** procedure option.

1. Mount the 24x30 compression plate.
2. Start the AecCalTool:

startcalibration

3. In the main window, the settings change and instructions appear on the display. An example of the main window with the selected **Determine HVL** procedure option is shown below.

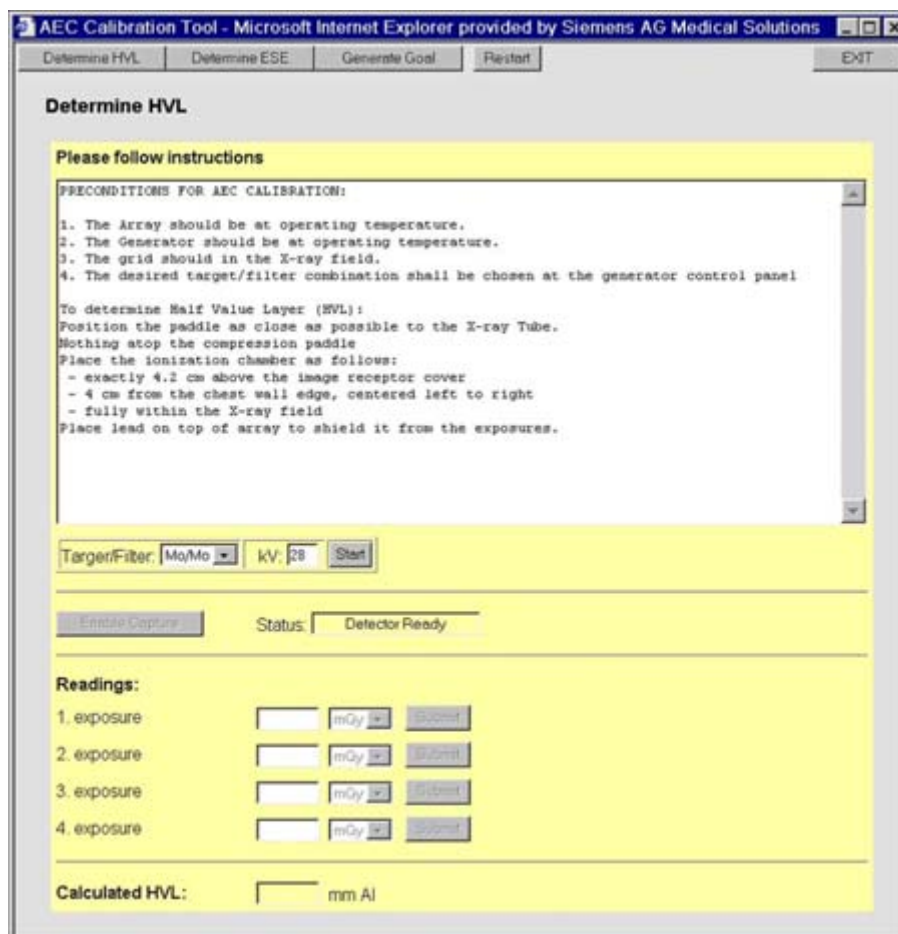


Fig. 3: Determining the Half Value Layer

Start with the following settings:

- You have to determine the **HVL** for **Mo/Mo**, **Mo/Rh** and **W/Rh**. The appropriate **target/filter** combination has to be set.
- **kV** has to be set to **28**.
- Instructions for generator and dosimeter configuration are displayed in the text window.



4. Be sure to select the correct values. Then press the **Start** button.
5. Once the setup is complete, click the **Enable Capture** button.

Make sure the generator is configured properly and then take the exposure. The **Status** indicator will change from **Detector Ready** to **Detector Armed**, **Detector Exposed**, **Detector NOT Ready** and then to **Detector Ready** again.

6. Select the appropriate **units** (mGy/RmR).

NOTE

Select "mGy" for "units", except in the USA, where the units have to be set to "R/mR".

In the **Readings** field, enter the dosimeter value with the appropriate units: mR (milliRoentgen) or mGy (milliGray).

NOTE

If you enter values, be sure to use a decimal point (e.g., 4.5) and NOT a comma.

Make sure the entry is correct, then click **Submit**.

The text window includes instructions for the next step.

7. Perform the displayed instructions.

The amount of aluminum added in this step depends on the target/filter selection.
(Mo/Mo = 0.3 mm; Mo/Rh = 0.3 mm; W/Rh = 0.5 mm)



8. Click the **Enable Capture** button.

9. Ensure that the generator is configured properly and take the exposure.

10. In the **Readings** field, enter the dosimeter value with the appropriate units. Make sure that the entry is correct, then click **Submit**. The text window includes instructions for the next step. The total thickness of aluminum in this step depends on the target/filter selection (Mo/Mo = 0.4 mm; Mo/Rh = 0.5 mm; W/Rh = 0.6 mm).



11. Perform the displayed instructions and click the **Enable Capture** button.

12. Ensure that the generator is configured properly and take the exposure.

13. In the **Readings** field, enter the dosimeter value with the appropriate units. Make sure that the entry is correct, then click **Submit**.

The text window includes instructions for performing the final HVL step.



14. Perform the displayed instructions and click the **Enable Capture** button.

15. Ensure that the generator is configured properly and take the exposure.

16. In the **Readings** field, enter the dosimeter value with the appropriate units. Make sure that the entry is correct, then click **Submit**.

The calculated **Half Value Layer** value is computed and displayed. The tool internally stores this value, which is then used for the **ESE** procedure.



17. You have to determine the **Half Value Layer** for **Mo/Mo**, **Mo/Rh** and **W/Rh**. Note the measured HVL values in Table 2.

Tab. 2 HVL values

Target/filter	Min. HVL value at 28 kV	Max. HVL value at 28kV	Measured HVL value
Mo/Mo	0.32	0.40	
Mo/Rh	0.38	0.46	
W/Rh	0.49	0.59	

Determining the Entrance Skin Exposure (ESE)

Select the **Determine ESE** procedure option if you need to determine a valid **mAs** for generating a goal image.

NOTE

If you already know the valid mAs to use and want to proceed with generating the goal image, go to [\(Generating the goal tables / p. 17\)](#).

The ESE procedure requires the HVL. If the HVL procedure has already been performed, the tool already has the HVL value. If you are skipping the HVL procedure to start the ESE procedure, enter the appropriate HVL value.

The ESE procedure involves taking three exposures. The dosimeter readings for each exposure are averaged to determine the ESE for the selected Average Glandular Dose (AGD). This, in turn, suggests the mAs that should be used to generate the goal table.

To determine the mAs value:

1. In the tool's main window, select the desired AGD value before starting to determine the ESE.

Once the first ESE exposure has been taken, the AGD value cannot be changed.

2. Select the **Determine ESE** procedure option.

If you know the HVL value, enter the fractional value, for example, 0.35.

If you do not know the HVL value, refer to [\(Determining the Half Value Layer \(HVL\) / p. 10\)](#).

Determine ESE

Please follow instructions

PRECONDITIONS FOR AEC CALIBRATION:

1. The Array should be at operating temperature.
2. The Generator should be at operating temperature.
3. The grid should be in the X-ray field.
4. The desired target/filter combination shall be chosen at the generator control panel

To determine Entrance Skin Exposure (ESE):
Position the paddle lightly above the ion chamber.
Nothing atop the compression paddle.
Place the ionization chamber as follows:
- exactly 4.2 cm above the image receptor cover
- 4 cm from the chest wall edge, centered left to right
- fully within the X-ray field
Place lead on top of array to shield it from the exposures.

Click on Start to start the procedure
Three exposures will be averaged to compute the ESE.

Target/Filter: Mo/Mo kV: 28 AGD: 1.5 mGy HVL: 0.35 mm Al Start

Enable Capture Status: Detector Ready

Readings:

1. exposure: [] mGy Submit

2. exposure: [] mGy Submit

3. exposure: [] mGy Submit

Calculated mAs: []

Fig. 4: Determine ESE

Start with the following settings:

- You have to determine the **mAs** for **Mo/Mo**, **Mo/Rh** and **W/Rh**. The appropriate **target/filter** combination has to be set. Start with **Mo/Mo**.
- **kV** has to be set to **28**.
- **AGD** has to be set to **1.5 mGy**.
- **HVL** is filled in automatically with the **Determine HVL** test result.
- Instructions for generator and dosimeter configuration are displayed in the text window.



3. Make sure that you have selected the correct values. Then press the **Start** button.
4. Click **Enable Capture**, then take the exposure.

The **Status** indicator will change from **Detector Ready** to **Detector Armed**, **Detector Exposed**, **Detector NOT Ready** and then to **Detector Ready** again.

5. Select the appropriate **units** (mGy/RmR).

NOTE

Set "mGy" for "Units", except in the USA, where the units have to be set to "R/mR".

In the **Readings** field, enter the dosimeter value with the appropriate units: mR (milliRoentgen) or mGy (milliGray).

NOTE

If you enter values, be sure to use a decimal point (e.g., 4.5) and **NOT** a comma.



6. Repeat steps 4 and 5 for the second and third ESE exposures. After the third exposure, the entered average of the three dosimeter values is displayed. In addition, the suggested **mAs** value to be used for **goal table** generation is displayed.

Fig. 5: Average mAs value

NOTE

In most cases, the suggested mAs value does not exactly match a mAs value that can be used to set the generator. In this case, it is recommended that the next lower mAs setting be used to avoid exceeding the desired AGD during the following AEC exposures.



7. You have to determine the **mAs** for **Mo/Mo**, **Mo/Rh** and **W/Rh**. Note the measured **mAs** values in (Tab. 3 / p. 16).

Tab. 3 mAs values

Target/filter	mAs value
Mo/Mo	
Mo/Rh	
W/Rh	

Generating the goal tables

Use the **Generate goal** procedure to generate the **goal table** for the selected target/filter combination. The goal table is created for the mAs value used by the generator to create the goal images.

Before performing the **Generate goal** procedure, you must have a valid **mAs** value. If you do not know a valid mAs value, you must perform the HVL and ESE procedures to determine it. Refer to [\(Determining the Half Value Layer \(HVL\) / p. 10\)](#) and [\(Determining the Entrance Skin Exposure \(ESE\) / p. 13\)](#).

During the procedure, 4 goal images are taken, and the average of these is used for the final result. The tool instructions prompt you to enable capture and exposure for each of the images. When the final image exposure is complete,

- the tool automatically generates the goal table with a name derived from the target/filter combination used and
- then loads it into the DirectRay PXCm.

To generate the goal image:

1. Select the **Generate goal** procedure option in the tool's main window.

NOTE

You can select the "Generate Goal" option without performing the "Determine HVL" and "Determine ESE" procedures. In this case, the current mAs value is used to configure the generator.

In the main window, the settings change and instructions are displayed.



Fig. 6: Generate the goal image

Start with the following settings:

- You have to determine the **goal tables** for **Mo/Mo**, **Mo/Rh** and **W/Rh**. The appropriate **target/filter** combination has to be set.
- **kV** has to be set to **28**.
- **AGD** has to be set to **1.5 mGy**.
- Instructions for generator and dosimeter configuration are displayed in the text window.

2. Follow the instructions in the text field for generator configuration.

NOTE

After determining the ESE, the suggested mAs value appears in the text field. This merely serves as a reminder; the user must manually set the proper mAs on the generator.



3. Make sure that you have selected the correct values. Then press the **Start** button.
4. Click the **Enable Capture** button, then take the exposure(s).

5. Once the final image has been written to a file, the images are averaged and the goal table file is generated and installed on the BRICK.



Fig. 7: Generate the goal image

6. Simply reboot the BRICK before attempting to take AEC exposures.
 - Log onto the service software. Select **Options-> Service> Local service**.
 - Select Acquisition System.
 - Select Brick Configuration.

7. Select **Brick -> Reboot Brick**.

The BRICK software switches to a higher user level, requiring you to enter a user name and password.

User name: **root**

Password: *********

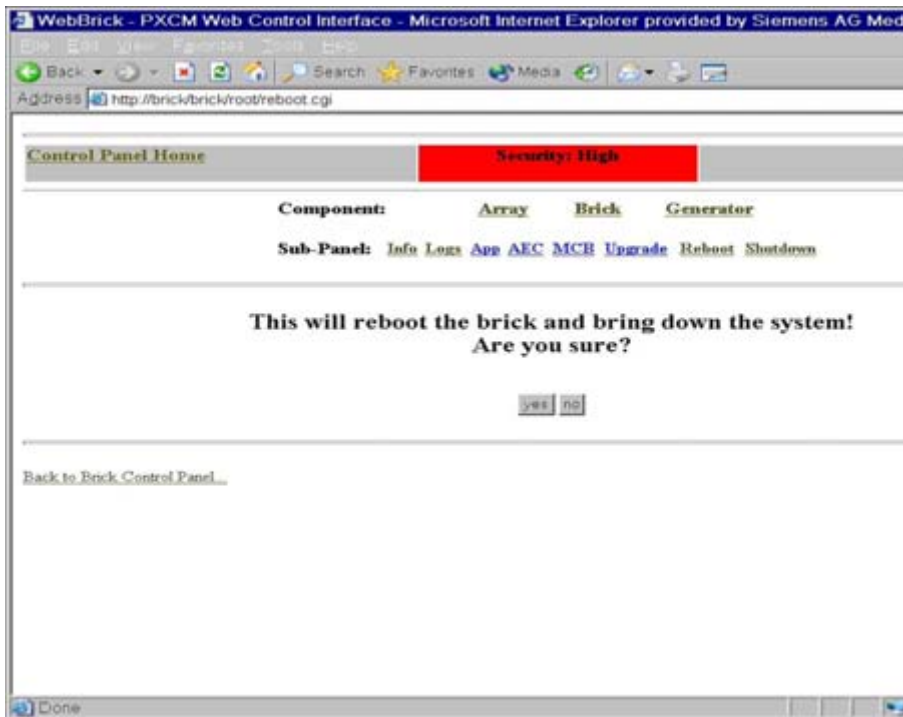


Fig. 8: Reboot the BRICK

8. You have to create the **goal tables** for **Mo/Mo**, **Mo/Rh** and **W/Rh**.



After all goal tables have been created, the system is ready to be used in the AEC mode.

Introduction

The WH AWS installation is mainly automated and requires little user interaction. Not all of the following steps require user interaction. Nonetheless, the steps have been included to permit a better understanding of the overall process.

If the system does not respond right away, it typically does not mean an error has occurred. In most cases, it takes a few moments for the system to react.

This chapter describes the complete WH AWS system software installation, including the Windows XP installation.

Preparation

Do the following before you start to reinstall the software:

- Back up all packages, if no up-to-date backup is available, using the service software **Backup & Restore** function.
- Archive all patient images residing on the WH AWS.
- Write down the following data:

Regional Settings, Language	Options -> Configuration -> Regional Settings	
Service Key		

Loading the software

Prerequisites

- The PC is turned **OFF** at the beginning of the installation.
- **No** CD is placed in the CD-ROM drive.

Loading the WH AWS BIOS CD

1. Turn **ON** the PC and press **F2**, to enter the BIOS menu. Enter the BIOS password.
2. Press **F9** in the BIOS menu to load the default BIOS settings. Confirm the switch with **YES**.
3. Insert the BIOS CD into the CD-ROM.

Press the ESC button and leave the BIOS via **Save Changes & Exit**. Confirm with **YES**. The PC reboots.

4. The PC boots from the CD-ROM and loads the **BIOS version**, if required. The following messages are displayed.

```
BIOS Installation Done - System Ready for Software Installation
Please remove BIOS CD!
Please turn off or reset system!
```

5. Remove the BIOS CD.

Loading the WH AWS software

1. Insert the first WH AWS installation CD.
2. Reboot the PC.

MS-DOS (as part of Windows 98) is started from the CD-ROM.

```
Starting Win98
```

After a short time, a start screen is displayed in text mode. In the top right corner, a message indicates that the EIDE, SCSI and CD-ROM drivers are loaded.

If any drivers cannot be found with this hardware configuration, an error message is generated and can be ignored.

3. After a short time, the screen changes and the PC starts to beep.

The following screen is shown:

Siemens AG B Med AWS VA11B installation (Int. WXP)	
SELECT WINDOW	INFORMATION WINDOW
Turn off computer to interrupt or press any key to confirm operation and to CONTINUE INSTALLATION	Creating a new primary partition on the first hard disk. This partition will be converted to NTFS during Windows XP installation. Confirm to DESTROY DATA on the first partition of the first hard drive.
HARDWARE DETECTION IN PROGRESS	
Checking first hard drive...	

4. Press **Enter** to continue with the installation. A new primary partition is created and the PC is restarted.
5. Leave the installation CD in the CD-ROM drive. After a short time, the following screen is displayed:

Siemens AG B Med AWS VA11B installation (Int. WXP)	
SELECT WINDOW	INFORMATION WINDOW
Distribution type: CUSTOMER UDB-file: on CD-ROM Machine Name: MedPC Keep data on other partitions Country: Other CONTINUE INSTALLATION	Press the ENTER key to toggle the distribution type to be installed. CUSTOMER: install release files DEVELOPER: debug files, as well. Use ARROW-KEYS to navigate
HARDWARE DETECTION RESULTS	
Matrox Graphic adapter (G400 or G450) found	

6. The following settings need to be made:

- Check the PCI card

Press **ALT O**. This checks the other hardware. The entry **DRC PCI card found** must be shown. In case it is not shown, check if the card is plugged in correctly. After error correction, reboot the PC and continue with the installation.

- Machine name

Enter the appropriate machine name.

NOTE

The machine name must be changed.

If you do not change the machine name 'MedPC', the syngo installation cannot be properly completed.

- Partitioning

Move the cursor to **Keep data on other partitions and toggle to create partitions on hard drive 2.**

Under **Country**:

USA must be selected for installations in the USA

or

Other must be selected for installations in ROW (Rest of World).

- Continue with the installation

Move the cursor to **CONTINUE INSTALLATION** and press **Enter**.

7. The final text on the screen changes. Press **Enter** again to continue with the installation. It is normal for the PC to start beeping again.

Siemens AG B Med AWS VA11B installation (Int. WXP)	
SELECT WINDOW	INFORMATION WINDOW
Distribution type: CUSTOMER UDB-file: on CD-ROM Machine Name: YBHH007154 Create partitions on hard drive 2 Country: Other Press any key to continue.	Now destroying all data and creating further partitions on hard drive 1-2. Please confirm to continue.
HARDWARE DETECTION RESULTS	
Matrox Graphic adapter (G400 or G450) found	

The first and second hard drives are partitioned.

8. The installation files are copied from the CD-ROM to the hard drive. The screen changes as follows:

Siemens AG B Med AWS VA11B installation (Int. WXP)	
SELECT MENU	INFORMATION WINDOW

Distribution type: CUSTOMER UDB-file: on CD-ROM Machine Name: YBHH007154 Country: Other Create further partitions on hard drive 1-2 Installation in progress...	Copying OEM setup files Operating System setup files Operating System fixes Additional device drives
HARDWARE DETECTION RESULTS	
Matrox Graphic adapter (G400 or G450) found	

After the installation, files are prepared and the CD-ROM is unloaded. The PC is then rebooted.

NOTE

The CD-ROM must be removed immediately, otherwise the PC automatically reloads the CD after rebooting and the installation restarts.

If this happens, remove the CD-ROM without striking any key and restart the PC.

9. The Windows XP setup copies the files to the hard drive. A scroll bar appears on the screen. After that, the PC is restarted.
10. Windows XP continues preparing the files. The PC is restarted.
11. The file system is converted from **FAT32** to **NTFS**. The PC is restarted.
12. The Windows XP setup starts for the first time in graphical mode (VGA mode, 640 x 480 pixels). The setup continues automatically, and several windows and dialogs appear. All dialogs are automatically answered as part of the automatic installation scripts.

NOTE

Do not manually interrupt the setup.

The PC restarts automatically.

13. At this point the WH AWS installation stops and displays the following DOS window.

```

-----
Siemens AG B Med AWS VA11B installation (Int. WXP)
-----

The installation has been configured to perform a partially
unattended installation. Now you have the opportunity to check
(and replace) system services, drivers and system settings.

Warning: No package has been found. Please insert the package to
be installed in a CD-Drive or press any key to skip installation
of Internet Explorer and the application.

Press any key to continue. . .

```

14. Insert the second WH AWS CD. Wait approximately 15 seconds until Windows XP recognizes the CD. Click the title of the DOS window and press **Enter**.

15. Additional applications are installed (Internet Explorer, Acrobat Reader, etc.). After that, the PC restarts.
16. A DOS window with the following text is displayed:

Installing Med Software

This installation step takes some time, but does not require any user interaction.
17. After another reboot of the system, a message appears asking if Internet Explorer is to be the default browser. Accept this. The system recognizes that no application licenses are installed.
 - Click on **Click here to start local service configuration** to access the service software.
 - Enter the appropriate service license and select the **Set as Default** checkbox and click **OK**.
 - The service software **home menu** is displayed.
18. Remove the WH AWS software CD.

Restoring the system settings

1. Select **Backup & Restore -> Restore** in the service software **home menu**.

NOTE

Before the restore operation is started, all patient registrations must be closed.

2. Insert your backup medium and select it in the **Backup** menu under **Drives**. Select the archives **SW-Settings_02** and **Security-Settings**. For **SW-Settings_02-Restore**, select all groups on the right side.
3. Restore **Security-Settings** and **SW-Settings_02**.
4. Restart the system, i.e., select **Local service-> Utilities-> System-> Restart system**.
5. After the restart, the syngo login screen is displayed. The first login takes some time, since the patient database is being created. The AWS login is complete when the **examination task card** is displayed.
6. If "Initialization of the Mammomat System failed" appears, ignore it and press **OK**.
7. **Language and keyboard setup**

The basic installation always uses English (United States) as the default for both the **user interface** and the **keyboard layout**.

The languages **French, English, Spanish** and **German** are supported. Proceed as follows.

 - Select **Options->Configuration->Regional and language options** in the main menu.
 - Adjust the language and keyboard setup.
 - Press **OK**.
8. Restart the system.
9. Select **Backup & Restore->Restore**.

10. Select the files **DXMG Mammomat** and **WH_AWS_backup_restore** and perform a re-store operation.
11. Remove the backup CD.
12. Restart the system.

Loading the BIOS CD

1. Load the BIOS CD. Reboot the PC.
2. The following message is displayed:
`Installation Done - HIPAA installed.`
The boot procedure from CD-ROM is now disabled again.
3. After the restart, the syngo login screen is displayed. The AWS login is complete when the **examination task card** is displayed.

Final steps

- **Gain calibration** has to be performed. Please see the MAMMOMAT Novation DR **Start-up** manual for more details on how to calibrate the system.
- Take a normal image and check it visually (refer to the Image Quality chapter in the Startup Instructions: SPB7-250.815.05...).

Chapter	Page	Changes
All	All	Initial version